REMARKS/ARGUMENTS

By the present Amendment, minor revisions have been made throughout the specification including the revisions requested by the Examiner in the Action. In this respect, a new page 25 has been submitted to indicate that there is no further text in the blank space. Included with the revisions to the specification is the correction of the term --mJ/cm^2-- on pages 74-87 and the revision on page 78 to correct a typographical error in translation from the Japanese priority application (see the attached copy of the cover page of the published priority application and page 23 with the correct number highlighted). It is note that such a revision to indicate the proper energy level is consistent with the description provided at page 78, lines 13-15 which refers to Example 1 that has a sensitivity of 80 mJ/cm^2.

The present Amendment also makes minor revisions in the claims including revisions which address the objections set forth in Sections 3 and 4 of the Action. The claims have further been amended so that claims 1-8 refer to a precursor consistent with the interpretation of these claims by the Examiner, and claim 1 specifically defines the negative planographic printing plate precursor as being capable of being recorded by infrared laser exposure consistent with the description in the specification and the recitation in claim 1 of the presence of an infrared absorbing agent. Finally, new dependent claims 17-20 have been added to define additional aspects of the invention supported by the specification. For instance, general formula (I) recited in claims 19 and 20 can be found in the specification starting on page 11.

Applicants respectfully submit that the claims now of record are patentable over the combination of Hattori et al., U.S. Patent No. 5,773,194, in view of Sheriff et al., U.S. Patent No. 6,117,610. Hattori et al. relates to a light-sensitive composition that can be used to prepare a presensitized lithographic printing plate. The light-sensitive composition comprises (a) a vinyl-type polymer having a unit represented by defined formula (1) and a carboxyl group, (b) a monomer, oligomer or polymer containing at least one polymerizable double bond in its molecule, (c) a photopolymerization initiator and (d) a polymerization inhibitor capable of trapping a radical. As is evident from the description provided in columns 25 and 26, particularly at column 26, lines 13-17, the patent does not use infrared light for exposure. Therefore, there is no reason to include an infrared absorbent in the disclosed light-sensitive composition in an attempt to meet the claims of record. Indeed, using an infrared laser to obtain exposure in independent method claim 9 would be contrary to the disclosed light sources taught in Hattori et al.

Further demonstrating the distinctness of the present invention, the Examiner's attention is respectfully directed to the level of energy used in the present invention (see pages 74-87 wherein energies on the order of 80 mJ/cm^2 to 100 mJ/cm^2 are used. Such high energy can be contrasted to Hattori et al. which uses low-energy output lasers for exposure as indicated by the sensitivity set forth in Tables 1 and 3-5 wherein the sensitivities on the order of 60-198 μJ/**m**^{2} is set forth. Therefore, since Hattori et al. is directed to a substantially different material and uses a substantially different method from those which are defined in the claims of record, it is evident that the claims now of record are patentable over this cited document.

Sheriff et al. has been cited to show the presence of infrared absorbers and the Examiner has alleged that it would be obvious to include certain amounts of such infrared absorbers in the light-sensitive composition of Hattori et al. Such a position is clearly incorrect given the fact that Hattori et al. does not relate to a material which is designed for infrared light exposure. Moreover, although Sheriff et al. teaches a material having an optical density of at least 0.05 to about 2.0, such range would not inevitably provide the results which can be obtained in accordance with the present invention. In this respect, the Examiner's attention is directed to the attached Declaration under 37 C.F.R. §1.132 which shows that optical densities of 0.35 and 0.3 (within the range disclosed in Sheriff et al., but outside the range of the claims of record) provide significantly inferior results compared to those which can be obtained in accordance with the present invention. Accordingly, the claims of record are also patentable over the combination of Hattori et al. and Sheriff et al.

The Examiner has further relied on Kobayashi, U.S. Patent No. 5,965,319, for the description of specific IR absorbers. However, applicants again note that there is no reason to incorporate an IR absorber into the material of Hattori et al. since the composition is not designed for IR exposure. Therefore, it is evident that such hypothetical combination of patents is not proper and that the claims of record are accordingly patentable over the cited prior art.

For all the reasons set forth above, applicants respectfully submit that the objections set forth in the Official Action have been overcome and that the claims of record are patentable over the cited documents, particularly in light of the discussion and technical

evidence that has been presented. Accordingly, reconsideration and allowance of the present application are respectfully requested.

Should the Examiner wish to discuss any aspect of the present application, she is invited to contact the undersigned attorney at the number provided below.

Respectfully submitted,

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最終頁に続く

(54)【発明の名称】　平版印刷版原版及びその製版方法

(57)【要約】
【課題】 赤外線レーザを用いてデジタルデータから直接記録可能であり、高感度で記録時の記録層のアブレーションが抑制され、網点再現性等の画像形成性及び耐刷性優れるネガ型平版印刷版原版及びその好ましい製版方法を提供する。
【解決手段】 支持体上に、重合性化合物及び赤外線吸収剤を含有し、光又は熱の作用により重合反応を生起し、アルカリ現像液に対する溶解性が低下する記録層を設けてなり、該記録層の光学濃度が０．４～２．０の範囲にあり、且つ、光又は熱の作用によりアルカリ現像液に対する溶解性が低下した後の該記録層の上部の硬膜度が記録層の平均硬膜度よりも高いことを特徴とする。このような平版印刷版原版は、露光後、硬化後の記録層に対する浸透性が低い現像液により現像することが好ましい。

（株）製ＦＰ－２Ｗの１：１水希釈液をフィニッシャーとして用い、現像処理した。この際、補充液は自動現像機の現像浴中の現像液の電気伝導度が一定となるように調整しつつ自動的に投入した。現像処理後、明瞭なベタ画像が形成できた版面エネルギーを測定したが、３００ｍＪ／ｃｍ²のエネルギーでも画像は形成されなかった。このように、上部硬膜度と平均硬膜度に差異がない比較例１の平版印刷版原版は、実施例に比較して感度が劣ることがわかった。

【０１４１】〔比較例２〕次に、比較例１で作成した平版印刷版原版［Ｓ－１］を高エネルギーの紫外線で露光して、評価を行なった。

（１．硬膜度の評価）平版印刷版原版［Ｓ－１］を高圧水銀灯を搭載したＰＳプリンターにて、紫外線露光した。露光後、比較例１と同様にして、硬膜度を測定した。記録層上部の硬膜度は１．１ＧＰａ、平均硬膜度は１．０ＧＰａ、硬膜度の比は１．１であった。

【０１４２】（２．網点再現性の評価）平版印刷版原版［Ｓ－１］を、スクリーン線数１７５１ｐｉの網点フイルムを介して、高圧水銀灯を搭載したＰＳプリンターにて、紫外線露光した。条件にて露光した。露光後、実施例１と同様にして現像処理した。得られた平版印刷版で再現できた最小網点と最大網点をルーペにより目視にて確認した。最小網点は３％までが再現でき、最大網点は９５％までが再現できた。再現できる最小網点が大きく、かつ再現できる最大網点が小さく、画像形成に高エネルギーの紫外線を用いた場合においても、赤外線レーザにより画像形成した実施例１より、網点再現性が劣ることがわかった。

【０１４３】〔実施例２〕

［支持体の作成］９９．５％以上のアルミニウムと、Ｆｅ０．３０％、Ｓｉ０．１０％、Ｔｉ０．０２％、Ｃｕ０．０１３％を含むＪＩＳ Ａ１０５０合金の溶湯を清浄化処理を施し、鋳造した。清浄化処理には、溶湯中の水素などの不要なガスを除去するために脱ガス処理し、セラミックチューブフィルタ処理をおこなった。鋳造法はＤＣ鋳造法で行った。凝固した板厚５００ｍｍの鋳塊を表面から１０ｍｍ面削し、金属間化合物が粗大化してしまわないように５５０℃で１０時間均質化処理を行った。 次いで、４００℃で熱間圧延し、連続焼鈍炉中で５００℃６０秒中間焼鈍した後、冷間圧延を行って、板圧０．３０ｍｍのアルミニウム圧延板とした。圧延ロールの粗さを制御することにより、冷間圧延後の中心線平均表面粗さＲａを０．２μｍに制御した。その後、平面性を向上させるためにテンションレベラーにかけた。

【０１４４】次に平版印刷版支持体とするための表面処理を行った。まず、アルミニウム板表面の圧延油を除去するため１０％アルミン酸ソーダ水溶液で５０℃３０秒間脱脂処理を行い、３０％硫酸水溶液で５０℃３０秒間中和、スマット除去処理を行った。

【０１４５】次いで支持体と感光層の密着性を良好にし、かつ非画像部に保水性を与えるため、支持体の表面を粗面化する、いわゆる、砂目立て処理を行った。１％の硝酸と０．５％の硝酸アルミを含有する水溶液を４５℃に保ち、アルミウェブを水溶液中に流しながら、間接給電セルにより電流密度２０Ａ／ｄｍ²、デューティー比１：１の交番波形でアノード側電気量２４０Ｃ／ｄｍ²を与えることで電解砂目立てを行った。その後１０％アルミン酸ソーダ水溶液で５０℃３０秒間エッチング処理を行い、３０％%硫酸水溶液で５０℃３０秒間中和、スマット除去処理を行った。

【０１４６】さらに耐摩耗性、耐薬品性、保水性を向上させるために、陽極酸化によって支持体に酸化皮膜を形成させた。電解質として硫酸２０％水溶液を３５℃で用い、アルミウェブを電解質中に通搬しながら、間接給電セルにより１４Ａ／ｄｍ²の直流で電解処理を行うことで２．５ｇ／ｍ²の陽極酸化皮膜を作成した。

【０１４７】この後印刷版非画像部としての親水性を確保するため、シリケート処理を行った。処理は３号珪酸ソーダ１．５％水溶液を７０℃に保ちアルミウェブの接触時間が１５秒となるよう通搬し、さらに水洗した。Ｓｉの付着量は１０ｍｇ／ｍ²であった。以上により作成した支持体のＲａ（中心線表面粗さ）は０．２５μｍであった。

【０１４８】［下塗り］次に、このアルミニウム支持体に下記下塗り液２をワイヤーバーにて塗布し、温風式乾燥装置を用いて９０℃で３０秒間乾燥した。乾燥後の被服量は１０ｍｇ／ｍ²であった。

【０１４９】

（下塗り液２）

- エチルメタクリレートと２－アクリルアミド－２－メチル－１－プロパンスルホン酸ナトリウム塩のモル比７５：１５の共重合体　０．１ｇ
- ２－アミノエチルホスホン酸　０．１ｇ
- メタノール　５０ｇ
- イオン交換水　５０ｇ

【０１５０】［記録層の形成］次に、下記記録層用塗布液［Ｐ－２］を調整し、上記の下塗り済みのアルミニウム板にワイヤーバーを用いて塗布し、温風式乾燥装置にて１１５℃で４５秒間乾燥して記録層を形成した。乾燥後の被覆量は１．２～１．３ｇ／ｍ²の範囲内であった。この記録層の光学濃度を実施例１と同様にして測定した。その結果、最大吸収波長は約８１０ｎｍで、光学濃度は０．９８であった。

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Aoshima et al : Group Art Unit: 1752

Application No. 09/904,511 : Examiner: Janet Baxter

Filed: July 16, 2001 :

For: PLANOGPRAPHIC PRINTING PLATE AND METHOD OF PRODUCING THE SAME

DECLARATION UNDER 37 C.F.R. §1.132

Honorable Commissioner of Patents and Trademarks

Washington, D.C. 20231

Sir:

I, Keitaro Aoshima, do declare and state as follows:

I received a Bachelor's Degree from Nagoya University, Faculty of Engineering, Department of Applied Chemistry in March 1983;

I received a Master's Degree from the graduate school of Nagoya University, Faculty of Engineering, Department of Technology in March 1985;

I joined Fuji Photo Film Co., Ltd. in April 1985, and since that time I have been engaged in the development of photosensitive materials for presensitized plates;

I am a co-inventor of the subject matter disclosed and claimed in the above-identified application; and

I am familiar with the Office Action of January 17, 2003, and understand the Examiner's rejections therein.

The following additional experiments were carried out under my supervision in order to make the advantages of the subject matter more clear.

Experiment

Comparative Example 3 was prepared and evaluated in the same manner as Example 1 the specification of the present application, except that the used amount of the infrared absorbing agent IR-1 was changed to 0.01 g so that the optical density becomes 0.35, that is outside the scope of the present invention. Further, Comparative Example 4 was prepared and evaluated in the same manner as Example 2 the specification of the present application, except that the used amount of the infrared absorbing agent IR-2 was changed to 0.01 g so that the optical density becomes 0.30, that is outside the

scope of the present invention.

The structures and the results of the experiment are shown in following Table 1.

Table 1

	Example 1	Comparative Example 3	Example 2	Comparative Example 4
Infrared absorbing agent	IR-1 (0.08 g)	IR-1 (0.01 g)	IR-2 (0.08 g)	IR-2 (0.01 g)
Optical density	1.16	0.35	0.98	0.3
FHU*	1.3 Gpa	0.8 Gpa	1.2 Gpa	0.7 Gpa
AFW**	0.7 Gpa	0.7	0.6 Gpa	0.6 Gpa
FHU/AFW	1.86	1.14	2	1.17
Sensitivity	80 (mJ/cm^2)	250 (mJ/cm^2)	80 (mJ/cm^2)	200 (mJ/cm^2)
MID***	1%	5%	1%	4%
MAD****	99%	95%	99%	97%
Printing endurance (× 1000 sheets)	100	60	100	65

FHU*: Film Hardness of Upper part of recording layer

AFW**: Average Film hardness of Whole recording layer

MID***: MInimum Dots reproduced at exposure shown in "Sensitivity"

MAD****: MAximum Dots reproduced at exposure shown in "Sensitivity"

Comparative Example 3 was inferior to Example 1 in sensitivity, dots reproductivity, and printing endurance. Comparative Example 4 was inferior to Example 2 in dots reproductivity.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information

and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

DATE: June 16, 2003

Keitaro Aoshima

Keitaro Aoshima